

**Importation of**  
***Brassica* spp. from Costa Rica, El Salvador, Honduras and Nicaragua**  
**into the United States**

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**A. Introduction**

This pest risk assessment (PRA) was conducted by the United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine (USDA, APHIS, PPQ) on species of *Brassica* from certain countries in Central America. The results are expressed qualitatively, *i.e.* “high” or “low”, rather than quantitatively, *i.e.* probabilities or frequencies and does not include the risk assessment methodology or rating criteria; these can be found in the document: *Pathway-Initiated Pest Risk Assessment: Guidelines for Qualitative Assessments* (USDA, 1995) (available from the authors of this risk assessment and on the Internet at <http://www.aphis.usda.gov/ppq/bats/bant>). Authority for APHIS to regulate plant pest/plant products is derived from the Plant Quarantine Act (1912), the Plant Pest Act (1957), the Noxious Weed Act (1974) and the Code of Federal Regulations, Title 7, Part 319, Subpart 56 (7 CFR 319.56 - Fruits and Vegetables). The methods and terminology used to initiate, conduct, and report this PRA are consistent with guidelines provided by FAO (1995) and NAPPO (1995).

**B. Risk Assessment****1. Initiating Event: Proposed Action**

This commodity-based, pathway-initiated, PRA was conducted to assess the risks associated with brussels sprouts (*Brassica oleracea* var *gemmifera*) from Costa Rica; Chinese cabbage (*B. pekinensis*) from El Salvador; broccoli (*B. oleracea* var *botrytis*) from Honduras; and various *Brassica* species from Nicaragua. The regulating authority for fruit and vegetable importation is 7 CFR 319.56.

## 2. Assessment of Weediness Potential of *Brassica* spp.

The results of the weediness screening for *Brassica pekinensis*, *B. oleracea* var *botrytis* and *B. oleracea* var *gemmaifera* (Table 1) did not prompt a pest-initiated risk assessment.

Table 1: Process for Determining Weediness Potential of a Plant Species

Species:	<b><i>Brassica</i> spp.</b>
Phase 1:	Brassicas, both native and introduced species, are widely represented and cultivated in the United States.
Phase 2:	Are any species listed in: <u>Yes</u> <sup>1</sup> <i>Geographical Atlas of World Weeds</i> (Holm et al., 1979) <u>NO</u> <i>World's Worst Weeds</i> (Holm et al., 1977) <u>NO</u> <i>Report of the Technical Committee to Evaluate Noxious Weeds; Exotic Weeds for Federal Noxious Weed Act</i> (Gunn & Ritchie, 1982) <u>Yes</u> <sup>2</sup> <i>Economically Important Foreign Weeds</i> (Reed, 1977) <u>Yes</u> <sup>3</sup> Weed Science Society of America list (WSSA, 1989) <u>Yes</u> Is there any literature reference indicating weediness (e.g., <i>AGRICOLA</i> , <i>CAB</i> , <i>Biological Abstracts</i> , <i>AGRIS</i> ; search on "species name" combined with "weed").
Phase 3: Conclusion:	These species are widespread in the US, and do not meet the definition of a Federal noxious weed. However, some <i>Brassica</i> species do pose a weed threat and are neither included nor approved in this Assessment (see annotations).

<sup>1</sup>14 species of *Brassica* are listed in the Geographical Atlas as world weeds: *B. adpressa* (=*Hirschfeldia incana*), *B. alba* (=*Sinapis alba*), *B. armoracioides*, *B. campestris* (=*B. rapa* var. *rapa*), *B. hirta* (=*S. alba*), *B. incana* (=*H. incana*), *B. juncea*, *B. kaber* (=*S. arvensis*), *B. napus*, *B. nigra*, *B. rapa*, *B. rugosa*, *B. sinapistrum*, *B. tournefortii*.

<sup>2</sup>Four species (or synonyms) of *Brassica* are included in Economically Important Foreign Weeds: *B. incana* and *B. adpressa* (both =*H. incana*), *B. erucastroides* (=*Sisymbrium septulatum*), *B. tournefortii*.

<sup>3</sup>Eleven *Brassicas* are listed in the WSSA publication: *B. alba* (=*B. hirta*, *S. alba*), *B. arvensis* (=*B. kaber*, *S. arvensis*), *B. campestris* (=*B. rapa* var. *rapa*), *B. geniculata* (=*H. incana*), *B. hirta* (=*S. alba*), *B. incana* (=*H. incana*), *B. juncea*, *B. kaber* (=*S. arvensis*), *B. nigra*, *B. rapa*, *B. tournefortii*.

All of the above are widespread in the United States (and do not meet the definition of Federal noxious weed), except for the following: *B. armoracioides*, a principal weed of the former Soviet Union; *B. rugosa*, a weed of Argentina and a common local weed of India; *B. sinapistrum*, a weed in the former Soviet Union; *B. erucastroides* (=*Sisymbrium septulatum*), a weed of Russia, Iraq, Iran, Afghanistan; *B. tournefortii*, a weed of Australia, Europe, Egypt, New Zealand, and Israel; has been introduced into Arizona, California, Nevada and Texas, and is considered a weed.

A literature search on the first four species revealed little or no information, indicating that these four are unlikely candidates for the Federal Noxious Weed list. However, Mediterranean mustard (*B. tournefortii*) may be a candidate for risk assessment and potential listing. It is of limited distribution and may be economically important. Propagative parts of this species should be excluded from approval.

### 3. Previous Risk Assessments, Current Status and Pest Interceptions

#### Decision History for *Brassica* spp. from Central America

1992 - Nicaraugua - *Brassica oleracea* (above ground parts) - Entry approved through all Ports.  
 1992 - Nicaraugua - *Brassica rapa* (above ground parts) - Entry approved through all Ports.  
 1989 - Costa Rica - *Brassica alboglabra* (leaf, stem) - Entry approved through all Ports.  
 1987 - Costa Rica - *Brassica chnensis* - Entry approved through all Ports.  
 1987 - Costa Rica - *Brassica rapa* - Entry approved through all Ports.  
 1987 - Costa Rica - *Brassica campestris* - Entry approved through all Ports.  
 1987 - Costa Rica - *Brassica juncea* (above ground parts) - Entry approved through all Ports.  
 1966 - Panama - Chinese cabbage - Entry denied due to *Pieris elodia* Bd. (=*Leptophobia aripa* (Bdv.)) and *P. monuste*  
 1963 - Honduras - *Brassica pekinensis* - Entry approved through all Ports.  
 1952 - Central America -*Brassica rapa* - Entry approved through all Ports.  
 1926 - Honduras -*Brassica oleracea* var *botrytis* -Entry approved through Northern and Southern Ports.  
 1926 - Honduras -*Brassica oleracea* var *botrytis* - Entry approved through Northern and Southern Ports.  
 1926 - Honduras -*Brassica oleracea* - Entry approved through Northern and Southern Ports.

#### Pest Interceptions on *Brassica* from Central America - FY85-96

PEST	HOST	ORIGIN
Agromyzidae, sp.	<i>Brassica pekinensis</i> (leaf)	Costa Rica
Agromyzidae, sp.	<i>Brassica rapa</i> (leaf)	Costa Rica(?)
Agromyzidae, sp.	<i>Brassica</i> sp. (leaf)	Costa Rica
Aphididae, sp.	<i>Brassica</i> sp. (leaf)	El Salvador
<i>Copitarsia</i> sp.	<i>Brassica oleracea</i> var. <i>botrytis</i>	Honduras
<i>Frankliniella</i> sp.	<i>Brassica</i> sp. (fruit)	Costa Rica
<i>Lobometopon</i> sp.	<i>Brassica oleracea</i> (leaf)	Honduras
Membracidae sp.	<i>Brassica</i> sp. (fruit)	Costa Rica
Miridae sp.	<i>Brassica</i> sp. (fruit)	Costa Rica

### 4. Pests associated with *Brassica* spp. in Central America

Table 2: Pests of *Brassica* spp.

Arthropoda			
Pest	Distribution <sup>1</sup>	Code <sup>2</sup>	References
Agromyzidae sp. (Diptera: Agromyzidae)	CR	x, z <sub>i</sub>	PPQ Interception
<i>Agrotis ipsilon</i> (Rottemburg) (Lepidoptera: Noctuidae)	cosmopolitan	c	Hill, 1975, 1987; Hodges <i>et al.</i> , 1983

Table 2: Pests of *Brassica* spp.

<b>Arthropoda</b>			
<i>Agrotis malefida</i> Guenée (Lepidoptera: Noctuidae)	cosmopolitan	c	McGuire and Crandall, 1967; Hedges <i>et al.</i> , 1983
<i>Altica amethystina</i> Olivier (Coleoptera: Chrysomelidae)	HN	e	Blackwelder, 1944; Saunders, 1983
Aphididae sp. (Homoptera: Aphididae)	SV	z <sub>e</sub>	PPQ Interception
<i>Aphis gossypii</i> Glover (Homoptera: Aphididae)	cosmopolitan	c	Blackman and Eastop, 1984; Hill, 1975, 1987
<i>Ascia monuste</i> (L.) (Lepidoptera: Pieridae)	CR, HN, NI, SV, US	c	Hedges <i>et al.</i> , 1983; McGuire and Crandall, 1967
<i>Brevicoryne brassicae</i> (L.) (Homoptera: Aphididae)	cosmopolitan	c	Blackman and Eastop, 1984; Hill, 1987
<i>Copitarsia</i> sp. (Lepidoptera: Noctuidae)	HN	z <sub>e</sub> , z <sub>i</sub>	Martell, 1974; PPQ Interception
<i>Copitarsia consueta</i> (Walker) (Lepidoptera: Noctuidae)	CA	z <sub>e</sub> , z <sub>i</sub>	Martell, 1974; McGuire and Crandall, 1967; Saunders, 1983
<i>Delia platura</i> (Meigen) (Diptera: Anthomyiidae)	cosmopolitan	c	Hill, 1987
<i>Diabrotica porracea</i> Harold (Coleoptera: Chrysomelidae)	CR, HN, NI	e	Blackwelder, 1944; Saunders, 1983
<i>Estigmene acrea</i> Drury (Lepidoptera: Arctiidae)	HN, NI, US	c	Hedges <i>et al.</i> , 1983; Zhang, 1994
<i>Euzophora osseatella</i> Treitschke (Lepidoptera: Pyralidae)	CR, HN, NI, SV	e	Zhang, 1994
<i>Evergestis rimosalis</i> Guenée (Lepidoptera: Pyralidae)	NI, US	c	Hedges <i>et al.</i> , 1983; McGuire and Crandall, 1967
<i>Faustinus</i> sp. (Coleoptera: Curculionidae)	NI	z <sub>e</sub>	McGuire and Crandall, 1967

Table 2: Pests of *Brassica* spp.

<b>Arthropoda</b>			
<i>Feltia subterranea</i> (F.) (Lepidoptera: Noctuidae)	CR	e	McGuire and Crandall, 1967
<i>Frankliniella</i> sp. (Thysanoptera: Thripidae)	CR	z <sub>e</sub>	PPQ Interception
<i>Hellula phidilealis</i> Walker (Lepidoptera: Pyralidae)	CA, SA, US	c	Hill, 1975, 1987; Hodges <i>et al.</i> , 1983
<i>Japanagromyza phaseoli</i> Spencer (Diptera: Agromyzidae)	CR	z <sub>i</sub>	Spencer, 1983
<i>Leptophobia aripa</i> Bud. (Lepidoptera: Pieridae)	CR, HN, SV	e	Zhang, 1994
<i>Lipaphis erysimi</i> (Kaltenbach) Homoptera: Aphididae)	cosmopolitan	c	Blackman and Eastop, 1984; Hill, 1975, 1987
<i>Liriomyza brassicae</i> Riley (Diptera: Agromyzidae)	cosmopolitan	c	Hill, 1987
<i>Lobometopon</i> sp. (Coleoptera: Tenebrionidae)	HN	z <sub>e</sub>	PPQ Interception
<i>Lobometopon metallicum</i> (Champion) (Coleoptera: Tenebrionidae)	CR	e	Blackwelder, 1944; Saunders, 1983
Membracidae sp. (Homoptera: Membracidae)	CR	z <sub>e</sub>	PPQ Interception
Miridae sp. (Heteroptera: Miridae)	CR	z <sub>e</sub>	PPQ Interception
<i>Murgantia histrionica</i> (Hahn.) (Heteroptera: Pentatomidae)	HN, US	c	McGuire and Crandall, 1967
<i>Myzus persicae</i> (Sulzer) (Homoptera: Aphididae)	cosmopolitan	c	Blackman and Eastop, 1984; Hill, 1975, 1987
<i>Papilio polyxenes</i> F. (Lepidoptera: Papilionidae)	CR, US	c	Hodges <i>et al.</i> , 1983; Zhang, 1994
<i>Phyllophaga menetriesii</i> Blanchard (Coleoptera: Scarabaeidae)	CR	e	McGuire and Crandall, 1967

Table 2: Pests of *Brassica* spp.

<b>Arthropoda</b>			
<i>Phyllophaga sanjosicola</i> Sayle (Coleoptera: Scarabaeidae)	CR	e	Blackwelder, 1944; McGuire and Crandall, 1967
<i>Phyllophaga vicina</i> Moser (Coleoptera: Scarabaeidae)	CR	e	Blackwelder, 1944; McGuire and Crandall, 1967
<i>Phyllophaga</i> sp. (Coleoptera: Scarabaeidae)	CR	e	McGuire and Crandall, 1967
<i>Plodia interpunctella</i> (Hubner) (Lepidoptera: Pyralidae)	CR, HN, NI, SV, US	c	Hodges <i>et al.</i> , 1983; Zhang, 1994;
<i>Plutella xylostella</i> (L.) (Lepidoptera: Plutellidae)	cosmopolitan	c	Hill, 1975, 1987; Zhang, 1994
<i>Schizaphis graminum</i> (Rand.) (Homoptera: Aphididae)	CA, SA, US	c	Blackman and Eastop, 1984; McGuire and Crandall, 1967
<i>Spodoptera eridania</i> (Cramer) (Lepidoptera: Noctuidae)	NI, US	c	Hodges <i>et al.</i> , 1983; Zhang, 1994
<i>Spodoptera exigua</i> (Hubner) (Lepidoptera: Noctuidae)	cosmopolitan	c	Hill, 1975, 1987; Zhang, 1994
<i>Spodoptera frugiperda</i> (J.E. Smith) (Lepidoptera: Noctuidae)	NI, US	c	Hodges <i>et al.</i> , 1983; McGuire and Crandall, 1967
<i>Thrips tabaci</i> Lindemann (Thysanoptera: Thripidae)	cosmopolitan	c	Hill, 1975, 1987
<i>Trichoplusia ni</i> (Hubner) (Lepidoptera: Noctuidae)	CR, HN, NI, US	c	Hill, 1987; Hodges <i>et al.</i> , 1983; McGuire and Crandall, 1967
<i>Xenochalepus signaticollis</i> (Baly) (Coleoptera: Chrysomelidae)	CR	e	McGuire and Crandall, 1967; Saunders, 1983
<b>Mollusca</b>			
<i>Bulimulus corneus</i> (Sowerby) (Bulimulidae)	NI, US	c	McGuire and Crandall, 1967; Pilsbry, 1946

Table 2: Pests of *Brassica* spp.

<b>Arthropoda</b>			
<b>Plant Pathogens</b>			
<i>Albugo candida</i> (Pers.) Kunze (Oomycetes: Peronosporales)	cosmopolitan	c	Farr <i>et al.</i> , 1989
<i>Alternaria brassicicola</i> (Schwein.) Wiltshire (Fungi Imperfecti: Hyphomycetes)	cosmopolitan	c	Farr <i>et al.</i> , 1989
<i>Alternaria brassicae</i> (Berk.) Sacc. (Fungi Imperfecti: Hyphomycetes)	cosmopolitan	c	Farr <i>et al.</i> , 1989
<i>Ascochyta</i> sp. (Fungi Imperfecti: Coelomycetes)	CR	$z_{ei}$	MAG, 1989
<i>Botrytis cinerea</i> Pers.:Fr. (Fungi Imperfecti: Hyphomycetes)	cosmopolitan	c	Farr <i>et al.</i> , 1989
<i>Cercospora brassicicola</i> Henn. (Fungi Imperfecti: Hyphomycetes)	CR, US	c	Farr <i>et al.</i> , 1989; MAG, 1989
<i>Colletotrichum higginsianum</i> Sacc. in Higgins (Fungi Imperfecti: Coelomycetes)	cosmopolitan	c	Farr <i>et al.</i> , 1989
<i>Erwinia carotovora</i> Holland (Eubacteriales: Enterobacteriaceae)	CR, US	c	Bradbury, 1986; MAG, 1989
<i>Erysiphe polygoni</i> DC. (Pyrenomycetes: Erysiphales)	worldwide	c	Farr <i>et al.</i> , 1989
<i>Fusarium</i> sp. (Fungi Imperfecti: Hyphomycetes)	CR	$z_{ei}$	MAG, 1989
<i>Heterosporium</i> sp. (Fungi Imperfecti: Hyphomycetes)	CR	c, $z_{ei}$	MAG, 1989
<i>Mycena citricolor</i> (Berk. & Curt.) Sacc. (Basidiomycetes: Agaricales)	CR	k, n	Decision Sheet- Costa Rica, 1987
<i>Mycosphaerella brassicicola</i> (Duby) Lindau in Engl. & Prantl (Ascomycetes: Loculoascomycetes) Anamorph: <i>Asteromyces brassicae</i> (Chev.) Boerema & Van Kesteren	CR, US	c	Farr <i>et al.</i> , 1989; MAG, 1989

Table 2: Pests of *Brassica* spp.

<b>Arthropoda</b>			
<i>Peronospora parasitica</i> (Pers.:Fr.) Fr. (Oomycetes: Peronosporales)	cosmopolitan	c	Farr <i>et al.</i> , 1989
<i>Phoma lingam</i> (Tode:Fr.) Desmaz. (Fungi Imperfici: Coelomycetes)	CR, PA, SV, US	c	CMI, 1991; Farr <i>et al.</i> , 1989; MAG, 1989
<i>Phytophthora</i> sp. (Oomycetes: Peronosporales)	CR	z <sub>ei</sub>	MAG, 1989
<i>Pseudomonas syringae</i> pv. <i>maculicola</i> (McCullon) Young, Dye & Wilke (Pseudomonadales: Pseudomonadaceae)	CR, US	f	Bradbury, 1986 MAG, 1989
<i>Pythium</i> sp. (Oomycetes: Peronosporales)	CR	z <sub>ei</sub>	MAG, 1989
<i>Rhizoctonia solani</i> Kuehn (Fungi Imperfici: Agonomycetes)	cosmopolitan	c	Farr <i>et al.</i> , 1989
<i>Sclerotinia sclerotiorum</i> (Lib) DeBary (Discomycetes: Helotiales)	worldwide	c	Farr <i>et al.</i> , 1989
<i>Xanthomonas campestris</i> pv. <i>campestris</i> (Pammel) Dowson (Pseudomonadales: Pseudomonadaceae)	CA, US	f	Bradbury, 1986; MAG, 1989

<sup>1</sup>Distribution: CA-Central America, CR-Costa Rica, HN-Honduras, NI-Nicaragua, SA-South America, SV-El Salvador,  
US-United States

<sup>2</sup>Code: c - Listed in non-reportable dictionary as non-actionable.  
e - Although pest attacks commodity, it would not be expected to remain with the commodity (plant part)  
during processing

f - Pest occurs in the U.S. and is not subject to official restrictions and regulations (i.e., not listed as  
actionable or non-actionable, and no official control program).  
k - Not specifically listed for host, but listed for other hosts in the same plant genus/family.  
n - Listed in the USDA catalogue of intercepted pests as actionable.  
x - Multiple interception records exist  
z - Internal feeder: Pest is known to attack or infect commodity and it would be reasonable to expect the pest  
may remain with the commodity during processing and shipping  
z<sub>e</sub> - External feeder: Pest is known to commonly attack or infect commodity and it would be reasonable to  
expect the pest may remain with the commodity during processing and shipping.

## 5. List of Quarantine Pests

Table 3: Quarantine Pests

### ARTHROPODA

*Altica amethystina* Olivier (Coleoptera: Chrysomelidae)  
*Copitarsia consueta* (Walker) (Lepidoptera: Noctuidae)  
*Diabrotica porracea* Harold (Coleoptera: Chrysomelidae)  
*Euzophora osseatella* Treitschke (Lepidoptera: Pyralidae)  
*Feltia subterranea* (F.) (Lepidoptera: Noctuidae)  
*Japanagromyza phaseoli* Spencer (Diptera: Agromyzidae)  
*Leptophobia aripa* Bud. (Lepidoptera: Pieridae)  
*Lobometopon metallicum* (Champion) (Coleoptera: Tenebrionidae)  
*Phyllophaga menetriesi* Blanchard (Coleoptera: Scarabaeidae)  
*Phyllophaga sanjosicola* Sayle (Coleoptera: Scarabaeidae)  
*Phyllophaga vicina* Moser (Coleoptera: Scarabaeidae)  
*Xenochalepus signaticollis* (Baly) (Coleoptera: Chrysomelidae)

### PLANT PATHOGENS

*Mycena citricolor* (Berk. & Curt.) Sacc.

## 6. Quarantine Pests Likely to Follow Pathway

Table 4: Quarantine Pests Likely to Follow Pathway

Pest	Country
<i>Japanagromyza phaseoli</i> Spencer	Costa Rica
<sup>1</sup> <i>Copitarsia consueta</i> (Walker)	Central America

<sup>1</sup>*Copitarsia* spp. have been reported, in Mexico, to feed internally in cabbage (*Brassica oleracea var capitata* L.) (Martell, 1974). Thus, there is the potential for similar behavior in other *Brassica* species.

Other organisms in this Assessment, not chosen for further scrutiny, may be potentially detrimental to the agricultural production systems of the United States. However, there were a variety of reasons for not subjecting them to further analysis: they are associated mainly with plant parts other than commodity; they may be associated with the commodity (however, it was not considered reasonable to expect these pests to remain with the commodity during processing); they have been intercepted, as biological contaminants, by PPQ Officers during inspections of these commodities and would not be expected to be found with every shipment. In addition, the biological hazard of organisms identified only to the generic level are not assessed due to the lack of adequate biological/taxonomic information. This lack of biological information on any given insect or pathogen should not be equated with low risk. By necessity, pest risk assessments focus on those organisms for which biological information is available. By developing detailed assessments for known pests that inhabit a variety of niches on the

parent species, *i.e.*, on the surface of or within the bark/wood, on the foliage, etc., effective mitigation measures can be developed to eliminate the known organism and any similar unknown ones that inhabit the same niches.

#### **7. Economic Importance: Consequences of Introduction**

Pests rated for potential economic importance are evaluated against five biological factors. The cumulative score for these elements is the Risk Rating (USDA, 1995).

Table 5: Risk Rating - Consequences of Introduction						
Pest	Climate/ Host	Host Range	Dispersal	Economic	Environ- mental	Risk Rating
<i>Japanagromyza phaseoli</i>	High	High	High	Medium	Medium	High
<i>Copitarsia consueta</i>	High	High	High	High	Medium	High

## 8. Likelihood of Introduction

The likelihood of introduction for a pest is rated relative to six factors (Tables 6 and 7) (USDA, 1995).

Table 6: Amount of Commodity Shipped

Number of 40' Containers Annually	Rating
10 - 100	Medium

Table 7: Risk Rating - Likelihood of Introduction

Pest	Likelihood of surviving postharvest treatment	Likelihood of surviving shipment	Likelihood of not being detected at port of entry	Likelihood of moving to suitable habitat	Likelihood of finding suitable hosts	Risk Rating
<i>Japanagromyza phaseoli</i>	High	High	Medium	High	High	<sup>1</sup> Medium
<i>Copitarsia consueta</i>	High	High	Medium	High	High	High

<sup>1</sup> The amount of commodity shipped (Table 6) for Costa Rica is rated as Low (less than 10 containers/year). Thus, the Medium rating in Table 7.

## 9. Pest Risk Potential

Pest Risk Potential is the combination of the consequences and likelihood of introductions (Tables 5, 6 and 7) (USDA, 1995).

Table 8: Pest Risk Potential

Pest	Pest Risk Potential
<i>Japanagromyza phaseoli</i>	High
<i>Copitarsia consueta</i>	High

## Phytosanitary Measures

The summation of the Consequences and Likelihood of Introductions (Tables 5, 6 and 7) yields the Pest Risk Potential (PRP). Organisms rated with Low PRPs may require only Port of Entry inspection to maintain phytosanitary security. However, pests with Medium to High PRPs may require phytosanitary measures more stringent than those provided, solely, by Port of Entry inspections. The choice of appropriate sanitary and phytosanitary measures to mitigate risks associated with Central American species of *Brassica* is undertaken as part of Risk Management, and is not addressed, *per se*, in this document.

*Brassica oleracea* var *gemmaifera* (brussels sprouts) from Costa Rica and *Brassica oleracea* var

*botrytis* (broccoli) from Honduras are currently permitted entry into the United States. Should additional pests, not identified in this Risk Assessment, be intercepted, appropriate quarantine action will be taken.

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